

San Jose Water Company System Overview

**** *Unofficial Version* ****

1 April 2021

Jim Oberhofer



Agenda

1. About San Jose Water Company
2. Pump Stations
3. Pipes and maps
4. Wastewater treatment
5. SJWC's Emergency Response



Our water systems

1. **Source water** – the lakes, rivers and underground aquifers that are fed by rain and Sierra melting snow.
2. **Water treatment** – the processes to filter and purify water so that it is safe for human use.
3. **Water distribution systems** – the pipes and pumps that deliver clean water to our taps.
4. **Wastewater collection systems** – the pipes and pumps that take away used water from our toilets, drains, bathtubs, and laundry. These are also called sewers.
5. **Wastewater treatment** – the processes to remove contaminants from our used water so that it can be safely returned to the environment.
6. **Stormwater systems** – the pipes, ditches and natural systems that channel our rain water away from our homes and businesses and back to the natural environment.



About San Jose Water Company (SJWC)

Serving over 1 million people, San Jose Water (SJW) company is one of the largest and most technically sophisticated urban water districts in the United States.

SJW delivers high-quality water to customers using a distributed network consisting of hundreds of facilities, pumps, lift stations, tanks, and other critical infrastructure.

Serves some or all of the cities of Campbell, Cupertino, Los Gatos, Monte Sereno, San Jose, and Saratoga.



About San Jose Water Company (SJWC)

System assets

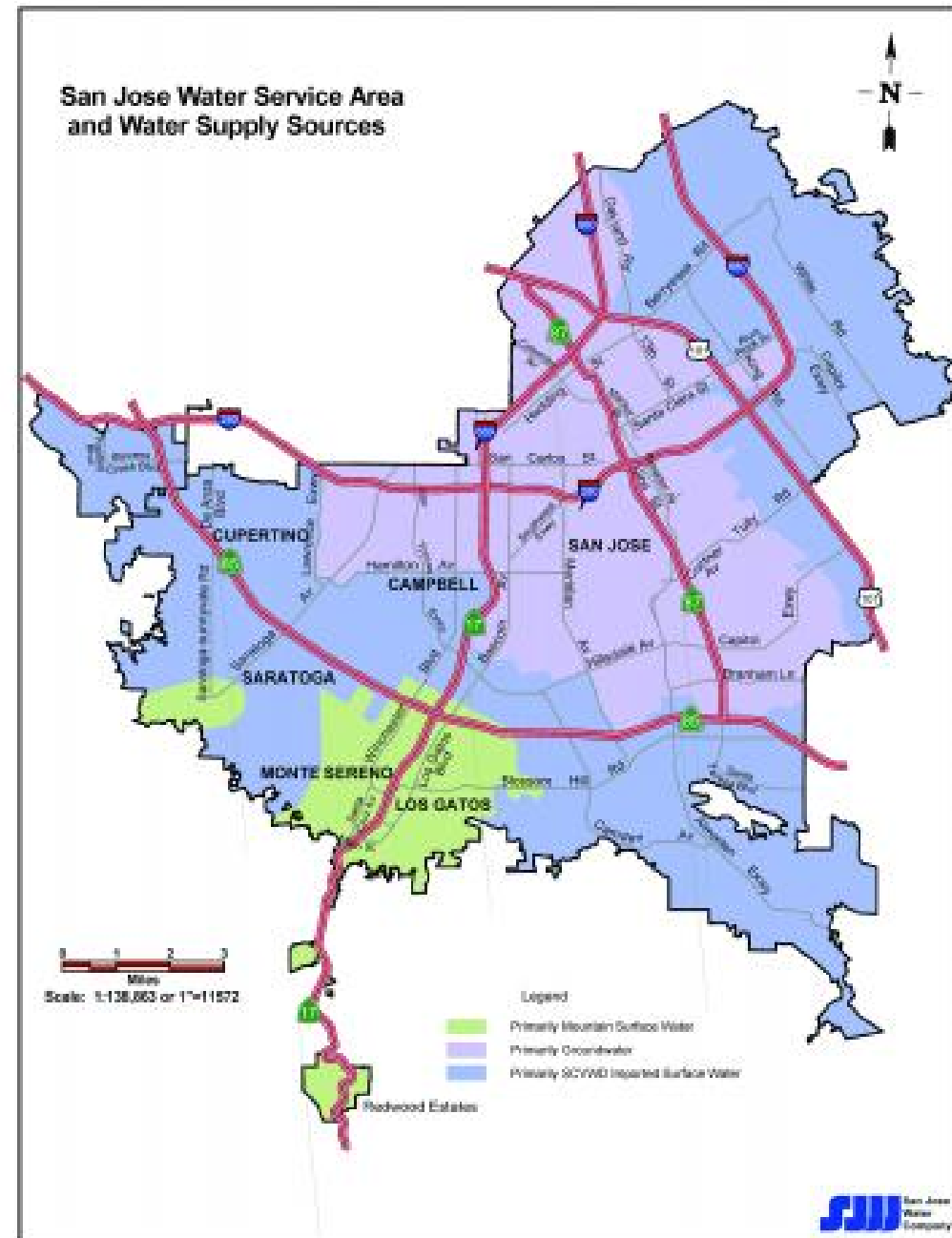
- 2.256 billion gallons of reservoir capacity
- 223 million gallons distribution storage
- 1 million customers in Santa Clara County
- 2,479 miles of transmission and distribution mains
- Supporting wells, boosting facilities, tanks, diversions, surface water treatment plants, equipment, offices and other facilities necessary to provide water service to its customers.



Where does SJWC water come from?

San Jose Water delivers its customers a mix of groundwater, surface water purchased through the Santa Clara Valley Water District, and treated surface water from our local water supply.

- **Mountain Surface Water**
- **SCVWD Imported Water**
- **Ground Water**



Where does SJWC water come from?

Local mountain surface water

- Collected on our watershed in the Santa Cruz Mountains, we treat it at our two water treatment plants. Local surface water accounts for approximately 10% of our supply.

Imported surface water

- provided by the Santa Clara Valley Water District. Surface water imported from the Sacramento-San Joaquin Delta and purchased from the Santa Clara Valley Water district accounts for approximately 50% of our supply.
- Comes from Sierra snowmelt and travels through the state and federal water projects before treatment at SCVWD's three water treatment plants.

Groundwater

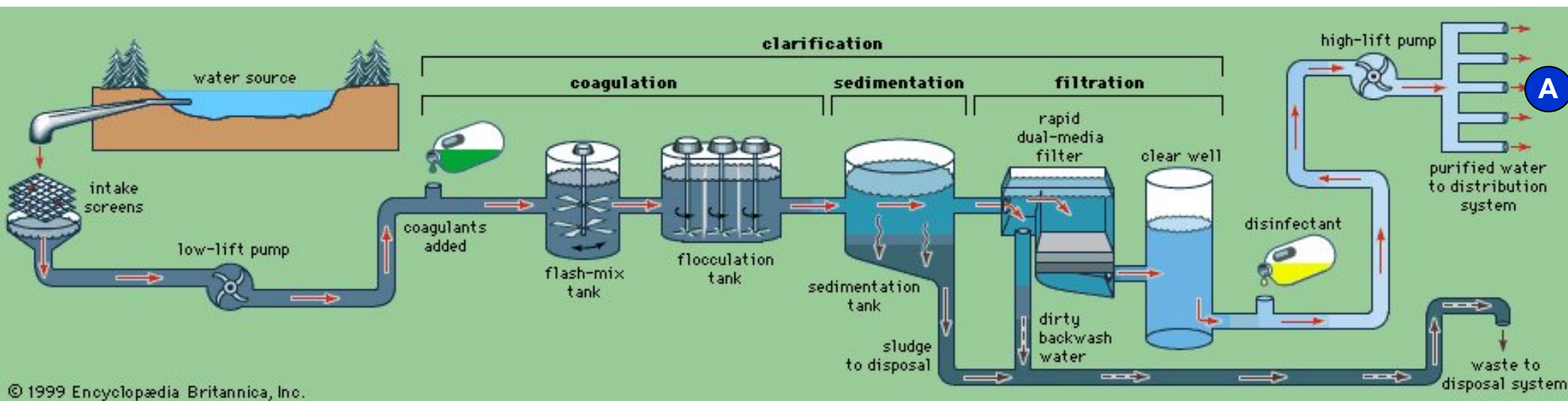
- pumped from over 100 wells that draw water from the Santa Clara Groundwater Basin. Groundwater accounts for approximately 40% of our supply.



In general...

← Santa Clara Valley Water District →

← SJWC →

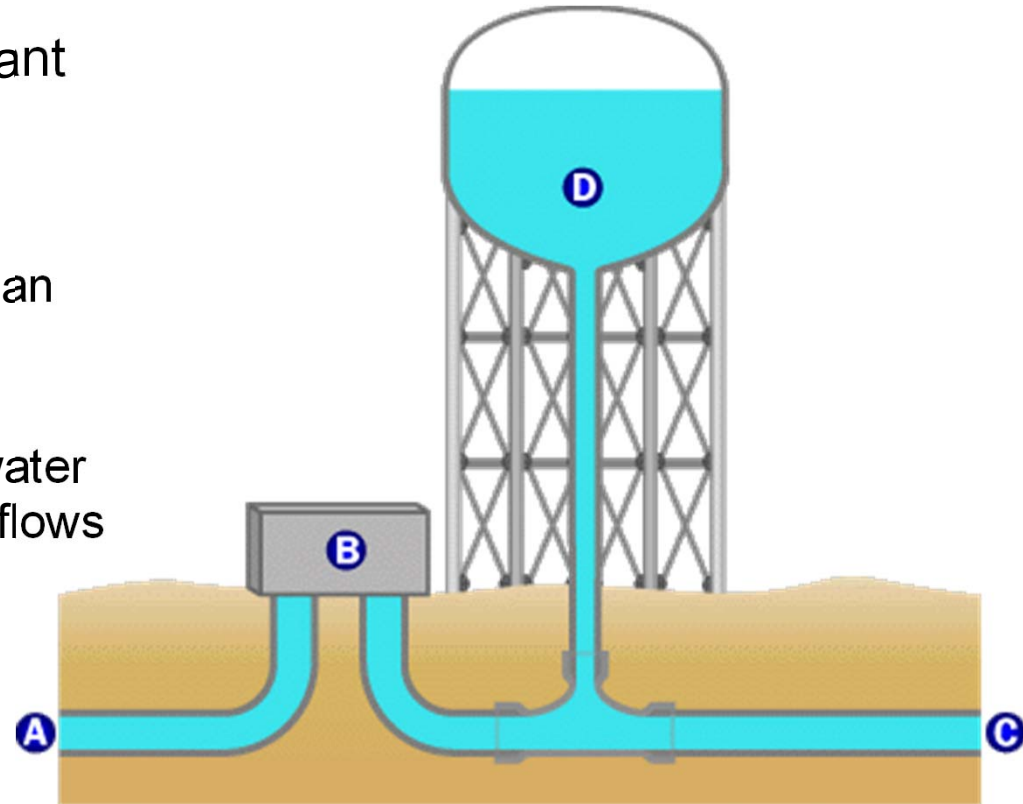


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In general...

- A** From the supplier of the treatment plant
- B** Pump station – a high-lift pump that pressurizes the water.
 - If the pump is producing more water than the community needs, then the excess flows automatically into the tank.
 - If the community is demanding more water than the pump can supply, then water flows out of the tank to meet the need.
- C** To primary feeders and customers
- D** Water



System components

What does SJWC have in Cupertino?

- Tanks... 10
- Pump stations... 4
- Wells... 3
- Water mains... miles!



Tanks and Pumps

Tanks – located at higher elevations to maintain water pressure for water consumers.



Lift Stations (pump) boost water to higher elevation tanks.

Pumps



Tanks... different ages and shapes



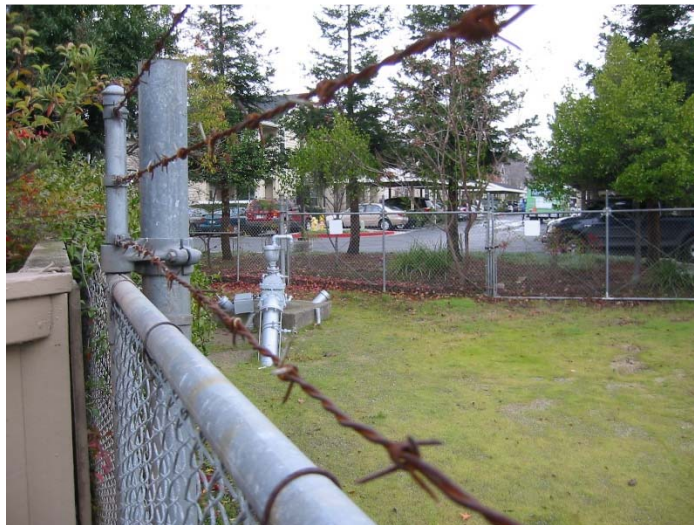
Pumps



Wells

Groundwater is pumped from over 100 wells that draw water from the Santa Clara Groundwater Basin. Groundwater accounts for approximately 40% of our supply.

We have 3 wells in Cupertino



Emergency Preparedness

Pumps

- SJWC has installed standby power generators at 36 of its strategic water production sites and manages a fleet of 21 portable generators deployed throughout the distribution system for power outages at remaining pumping facilities.
- commercial office and operations control centers are outfitted with standby power equipment that allow critical distribution and customer service operations to continue during a power outage



Real-time monitoring

San Jose Water uses Samsara technology to gain real-time visibility into pumps and equipment to ensure efficient operational management, higher reliability, informed capital planning, and better customer service.

Highlights:

- ***Real-time visibility*** into power meters, PLCs, and sensors across hundreds of pump and other facilities allows SJWC to monitor operations for safety, reliability, and cost
- ***Live Operational Efficiency*** is automatically calculated and tracked in order to inform day-to-day decisions, reduce overall operating costs, and improve capital investments
- ***Machine Health*** monitoring on all critical equipment with live vibration and temperature prevents unplanned downtime and automates manual preventative maintenance checks



References

- <http://www.valueofwater.ca/water-facts/how-do-our-water-systems-work/>
- <http://diglt.com/projects/sjwc-tanks-and-pump-stations/>
- <https://www.samsara.com/customers/san-jose-water-company>
- <https://www.britannica.com/technology/water-supply-system/Pumps>

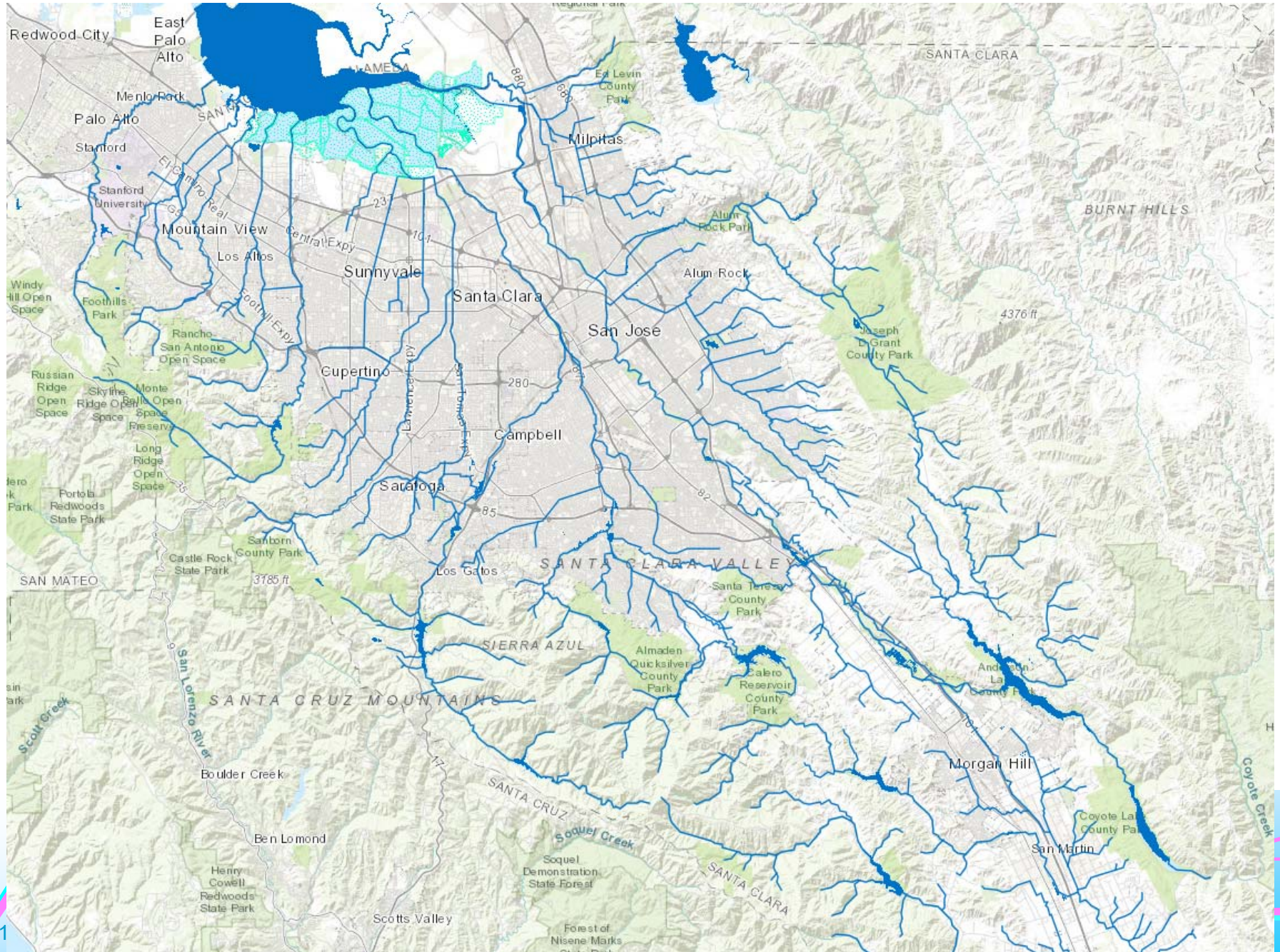


Santa Clara Valley Water District

The mission of the Santa Clara Valley Water District is to provide Silicon Valley safe, clean water for a healthy life, environment, and economy.



Valley Water Footprint



SANTA CLARA COUNTY GROUNDWATER AT-A-GLANCE

a graphic representation not intended as a technical exhibit



Land Surface Elevation

Groundwater Elevation

Population

ELEVATION

100 ft

50

0

-50

-100 ft

POPULATION

2 million

1 million

0

Natural groundwater

Land subsided about 13 feet in San Jose between 1915 and 1970

Reservoirs constructed to capture more local water

Increased deliveries of imported water (federal)

First deliveries of imported water (state)

Year

1900

1920

1940

1960

1980

2000

2020

Last updated January 27, 2017

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1 April 2021

SJWC System Overview

Water Treatment Plants

Valley Water

1. Rinconada Water Treatment Plant

- In service 1967; delivers up to 80 million gallons / day
- Draws from South Bay Aqueduct (SBA) and the San Luis Reservoir

2. Penitencia Water Treatment Plant

- In service 1974; delivers up to 40 million gallons / day
- Draws from California Aqueduct, then the South Bay Aqueduct in Tracy

3. Santa Teresa Water Treatment Plant

- In service 1989; delivers up to 100 million gallons / day
- Draws from San Luis Reservoir

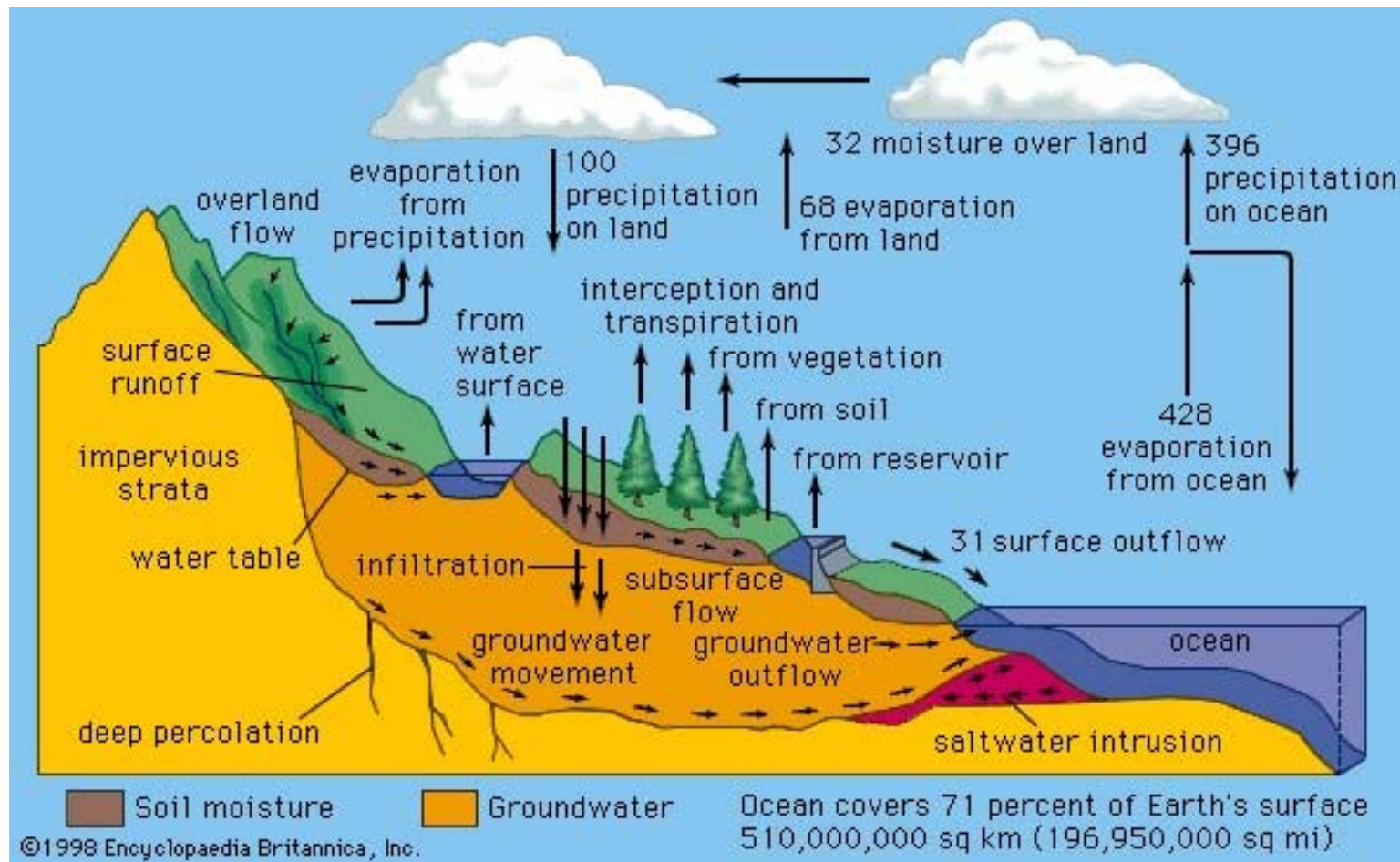


Thank you

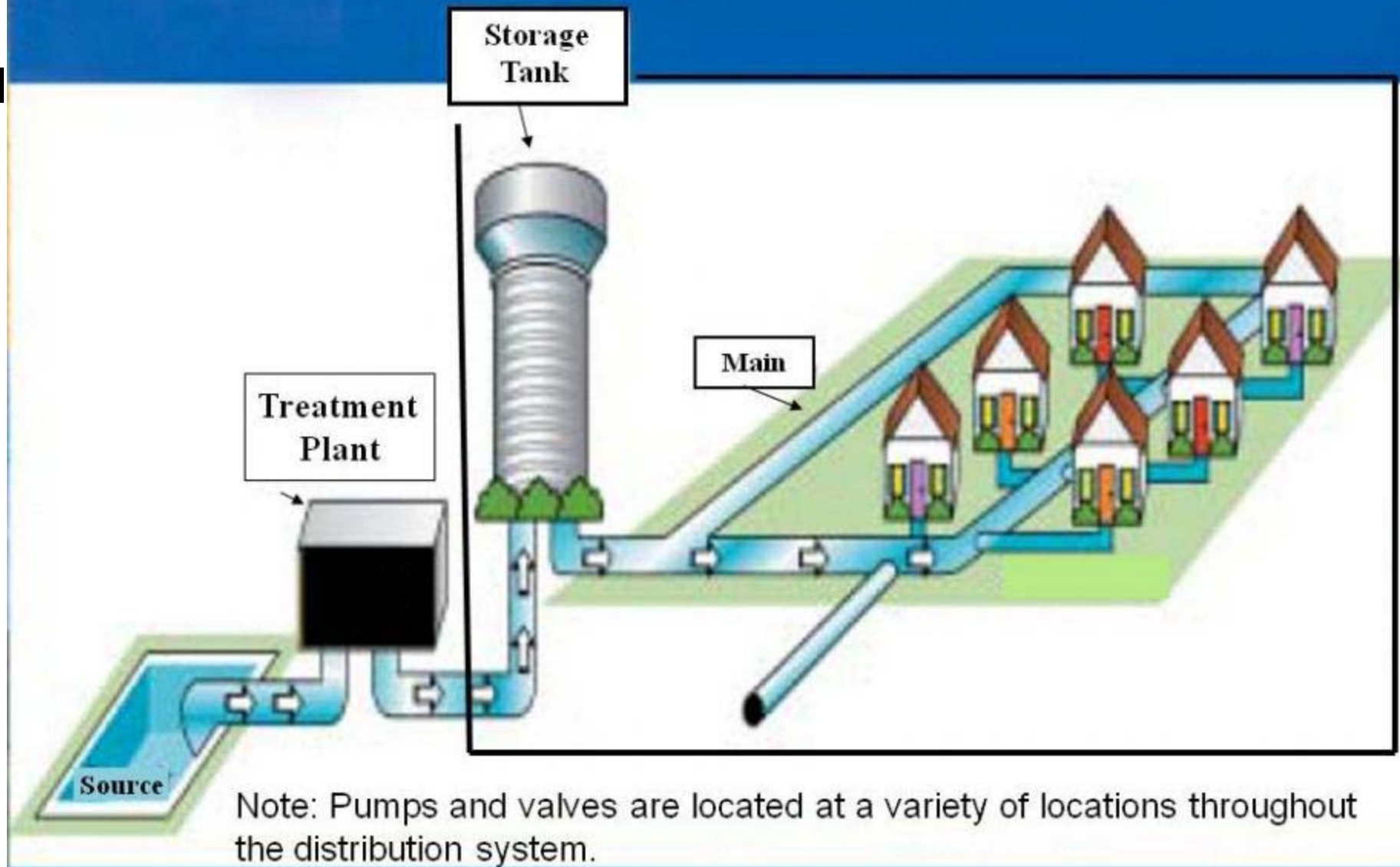
Any Questions?



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Water Supply Distribution System



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